

DETAILED DESCRIPTION

is set to 1/4.

Further, when the intermediate frequency is set to 0 Hz in products to be marketed in Japan, to receive a UHF channel, the local oscillator 19 is oscillated at 767 to 473 MHz and the dividing rate of the first programmable divider is set to 1. To receive a VHF high-band channel, the local oscillator 19 is oscillated at 657 to 519 MHz and the dividing rate of the first programmable divider 16 is set to 1/3. To receive a VHF low-band channel, the local oscillator 19 is oscillated at 630 to 558 MHz and the dividing rate of the first programmable divider 16 is set to 1/6.

Fig. 2 shows another embodiment of the tuner of the present invention. This tuner uses a plurality of mixers for different frequency bands to carry out frequency conversion. The same elements as in Fig. 1 are given the same reference numerals and their descriptions are omitted.

A nation identification signal V_c is output from the PLL IC 20 to a second programmable divider 17 and a third programmable divider 18. In the case of products to be marketed in the U.S., when the tuner is powered on, the dividing rate of the second programmable divider 17 is set to 1/3 and the dividing rate of the third programmable divider 18 is set to 1/5.

To receive a UHF channel TV signal, the TV signal output from the first preamplifier 6 is applied to a second

mixer 10 after an image frequency signal is attenuated by a first image trap 26. The local oscillation signal is directly applied to the second mixer 10 from the local oscillator 19 so that the frequency of the TV signal is converted into an intermediate frequency of 44 MHz by the local oscillation signal.

To receive a VHF high-band channel TV signal, the TV signal output from the second preamplifier 7 is applied to a third mixer 11 after an image frequency signal is attenuated by a second image trap 27. The local oscillation signal output from the local oscillator 19 is applied to the third mixer 11 after its frequency is divided to 1/3 by the second programmable divider 17 so that the frequency of the TV signal is converted into an intermediate frequency of 44 MHz by the local oscillation signal.

To receive a VHF low-band channel TV signal, the TV signal output from the third preamplifier 8 is applied to a fourth mixer 12 after an image frequency signal is attenuated by a third image trap 28. The local oscillation signal output from the local oscillator 19 is applied to the fourth mixer 12 after its frequency is divided to 1/5 by the third programmable divider 18 so that the frequency of the TV signal is converted into an intermediate frequency of 44 MHz by the local oscillation signal.

To use this tuner in products to be marketed in Japan,

a nation identification signal V_c output from the PLL IC 20 is converted into a code indicative of Japan and output to the second programmable divider 17 and the third programmable divider 18, and the dividing rate of the second programmable divider 17 is set to 1/3 and the dividing rate of the third programmable divider 18 is set to 1/5 when the tuner is powered on.

To receive a UHF channel, a local oscillation signal having a frequency of 824 to 530 MHz is output from the local oscillator 19. To receive a VHF high-band channel, the local oscillator 19 is oscillated at 810 to 690 MHz and the dividing rate of the second programmable divider 17 is set to 1/3. To receive a VHF low-band channel, the local oscillator 19 is oscillated at 648 to 600 MHz and the dividing rate of the third programmable divider 18 is set to 1/4.

In the above embodiment, the intermediate frequency is 44 MHz. When the intermediate frequency is 0 Hz, the dividing rate of the second programmable divider 17 is set to 1/3 and the dividing rate of the third programmable divider 18 is set to 1/9. To receive a UHF channel, the local oscillator 19 is oscillated at 803 to 473 MHz. To receive a VHF high-band channel, the local oscillator 19 is oscillated at 639 to 531 MHz. To receive a VHF low-band channel, the local oscillator 19 is oscillated at 765 to 513 MHz.

When this tuner is used in TVs to be marketed in